

Users and Innovation Cover Sheet

(Not counted in 10 page limit)

Cover Sheet for Proposals/Expressions of Interest All appropriate sections must be completed.	<i>JISC Capital Programme</i>
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Name of Capital Programme: Users and Innovation: Personalising Technologies	
Name of Area Bidding/Submitting Interest For (tick one):	
Call I a) : Users and Innovation Support Project(s) Project 1 : Support for community of practice and online activities	
Call I b): Users and Innovation Support Project(s) Project 2 : Support for Users and Innovation development model	
Call II: Next Generation Technologies and Practice Phase 1 Expression of Interest	
Call III: Implementations of Personal e-Administration to Support Teachers and Researchers	✓
Name of Lead Institution: Leeds Metropolitan University	
Name of Proposed Idea (Call II) / Name of Proposed Project (Call III): Integrating Repository Function with Work Practice: Tools to Facilitate Personal E-Administration	
Name(s) of Individual/Team (Call II) / Name(s) Project Partner(s) (Call III): Leeds Metropolitan University, KaiNao Ltd	
Full Contact Details for Primary Contact:	
Name: Professor Janet Finlay Position: Professor of Interactive Systems Email: j.finlay@leedsmet.ac.uk Address: Innovation North, Caedmon Hall Headingley Campus Leeds, LS6 3QS Tel: 0113 283 2600 ext 3578 Fax:	
Length of Project:	2 years
Project Start Date:	March 2007
Project End Date:	March 2009
8. Total Funding Requested from JISC:	
	£192,913

JISC Funding Broken Down over Financial Years (April – March):		
Apr06 – Mar07	Apr07 – Mar08	Apr08 – Mar09
£7,161	£102,083	£83,669
Total Institutional Contributions: £120,263		
Percentage Contributions over the Life of the Project:	JISC 62%	PARTNERS 38%
<p>Outline Project Description</p> <p>This application proposes a 24 month project to develop a suite of tools and practices that will reduce the administrative impact of repository use on teaching and research staff. Repositories have the potential to enhance productivity and quality through effective management of assets relating to learning and teaching, research, policy and decision making. However unless their use is integrated into existing work practices there is a danger that they will increase rather than decrease the overall workload of staff and ultimately therefore be under-utilised. The activities of managing assets and resource discovery, though pivotal to the successful deployment of repositories to support research and learning, are viewed by staff as adding to their administrative overload. This project will therefore explore ways of integrating these essential functions into the tools and work practices that research and teaching staff already use in order to provide personal e-administration support for the use of repositories. We will draw on previous experiences, existing tools and in depth studies of cross disciplinary work practices to inform an iterative participatory development cycle, that will be used to develop a suite of interoperable personal e-administration tools.</p>		
I have looked at the example FOI form at Appendix A and included an FOI form in the attached bid (Tick Box)	YES	
I have read the Circular and associated Terms and Conditions of Grant at Appendix B (Tick Box)	YES	

FOI Withheld Information Form

(Not counted in 10 page limit)

We would like JISC to consider withholding the following sections or paragraphs from disclosure should the contents of this proposal be requested under the Freedom of Information Act.

We acknowledge that the FOI Withheld Information Form is of indicative value only and that JISC may nevertheless be obliged to disclose this information in accordance with the requirements of the Act. We acknowledge that the final decision on disclosure rests with JISC.

Section / Paragraph No.	Relevant exemption from disclosure under FOI	Justification

Please see <http://www.ico.gov.uk> for further information on the Freedom of Information Act and the exemptions to disclosure it contains.

Example:

Section / Paragraph No.	Relevant exemption from disclosure under FOI	Justification
2.4	<i>s.43 Commercial Interests</i>	<i>Contains detailed description of our proposed system design which would damage our commercial interests if disclosed by making this information available to competitors</i>

Integrating Repository Function with Work Practice: Tools to Facilitate Personal E-Administration

1. Introduction

1.1. Rationale

Repositories have the potential to enhance productivity and quality through effective management of assets relating to learning and teaching, research, policy and decision making. However unless their use is integrated into existing work practices there is a danger that they will increase rather than decrease the overall workload of staff and ultimately therefore be under-utilised. The activities of managing assets and resource discovery, though pivotal to the successful deployment of repositories to support research and learning, are viewed by staff as adding to their administrative overload. This project will therefore explore ways of integrating these essential functions into the tools and work practices that research and teaching staff already use in order to provide personal e-administration support for the use of repositories.

1.2. Nature of work

This project will develop and evaluate tools to integrate the necessary repository-related functions of depositing assets, creating metadata, resource discovery and asset retrieval and reuse into common proprietary work tools, such as Microsoft Office, and their open source equivalents, such as Open Office. The project will focus on the learning and teaching activity, in order to make the scope of the project manageable, but will develop generic tools which are applicable to other asset management areas. We will explore the development of customised tools to support individualised work flows.

The project builds on our prior experience of learning object repositories and tools in the HLSI (Higher Level Skills for Industry) project, funded by Yorkshire Forward, the EU funded projects eDILEMA: E-resources and Distance Learning Management (90683-CP-1-2001-1-CZ-Minerva-M) and REPLIKA (European Repository for Learning Innovation and Knowledge Acquisition) projects and the current HEFCE funded Centre of Excellence in Teaching and Learning Assessment and Learning in Practice Settings (CETL ALPS) repository project, each of which has contributed to our understanding of repository tools and their use.

The proposal is also informed by the recognition at Leeds Metropolitan University that an institutional repository will be a necessity to manage its assets in terms of learning materials, research outputs, institutional documents and images in the medium term. The investigation of the type of repository required and how it will be delivered is the subject of another bid under the JISC Capital Programme (Repositories and Preservation Repository Start-Up and Enhancement Project: Wendy Luker). However whatever is selected it must not add significantly to the administrative load of teaching and research staff if it is to be successfully and usefully deployed. The aim of this independent but complementary project, therefore, is to explore integrative tools that will support the necessary personal e-administrative functions that the introduction of an institutional repository will require of staff. Although of key strategic importance to Leeds Met, the project is not tied to a specific repository implementation and will develop interoperable tools and processes using open standards and a service oriented approach.

1.3. Length of project

The project will run for 2 years from March 2007 to March 2009

1.4. Summary of contribution

The project will contribute a suite of tools and practices that will reduce the administrative impact of repository use on teaching and research staff. The focus will be on a personalised e-administration solution to integrate with institutional repositories. We will draw on previous experiences, existing tools and in depth studies of cross disciplinary work practices to inform an iterative participatory development cycle.

The contribution to the wider HE and FE community will be both a deeper understanding of how repositories are used and integrated into everyday practice and a set of interoperable tools and processes which can be deployed with different repositories and work software. We will also contribute Service Usage Models and Service Expression Descriptions for this activity to the e-Framework.

2. Project Description

2.1. Background

Interest in repositories has grown significantly in recent years with a number of projects sponsored by JISC, HEFCE and the EU among others developing repositories for learning objects, for research reports, theses, and multimedia assets. There are now a number of open national and international repositories such as Jorum¹ and MERLOT², as well as an increasing number of institutional repositories.

However in spite of this growth in provision, and the potential of such repositories to enhance productivity and quality through effective management of assets relating to learning and teaching, research, policy and decision making, there is evidence to suggest that repositories are under utilised by their potential users and will not be utilised without supporting integrated tools to maximise the user's return on investment of time.³ The JISC funded CD-LOR project has been investigating the reasons for the under use of learning object repositories in particular, and identifies four barriers to utilisation of learning object repositories⁴: socio-cultural, pedagogic, organisational/management and technological. Solutions to these problems are complex but, according to the findings of the CD-LOR project, must take better account of user communities and context and ensure that the repository is seen as part of the normal context of work rather than as an isolated tool. This concurs with our own experience with HLSI, eDILEMA and REPLIKA where reluctance to fully use the repository was due to the perceived (and actual) overheads associated with its use⁵. We would suggest three primary activities where users find repositories can add to their work load: creation of metadata as assets are packaged and added to the repository; finding relevant resources in the repository; and the longer term management and sharing of repository items of personal interest.

The first two of these are, of course, interdependent: it is the quality of the metadata which allows the resource to be discovered. However processes for both metadata creation and repository searching are still problematic. The repository is very similar to a conventional library in its propensity to hide the items it acquires. However, unlike the library's tangible materials, which would permit retrieval by inspection of the entire collection, the electronic repository is dependent entirely on different types of indexing to facilitate retrieval of relevant items. The dependence on author-created metadata propounds this problem. Pockley (2003)⁶, for example, reports examples of failures of author-created metadata. Our own experience on the REPLIKA project and inspection of its resource base illustrates the difficulties of getting contributors to insert effective meta tags. KaiNao's Power Learn Solution⁷ suite of tools starts to address some of these issues but there is still work to be done. The CETL ALPS repository project (ending March 2007) is also investigating how the metadata is recorded and by whom during the deposit process. This will include an exploration of who is best equipped to apply such metadata (the 'object creator' or third party, information specialists) and ways in which the application of metadata can be simplified or automated. The results of all of these projects will inform this project and provide us with the initial user data and software tools to begin further development of an integrated suite of tools and processes for metadata creation and resource discovery.

The third area of personal management and sharing of repository items was also highlighted on the REPLIKA project. Although a resource repository was available, users often chose alternative means to share and manage assets, leading to multiple copies and additional complexity in practice. Providing a mechanism to allow users to maintain a personal "view" of a subset of the repository (linked indeed with other resources) would be a beneficial management support. E-portfolios, though most commonly used for learners to document their learning, have the potential to provide such a management tool, allowing users to build up their own record of personal contribution and use of the repository

¹ www.jorum.ac.uk

² www.merlot.org

³ Strijker, A. (2004), *Reuse of Learning objects in Context: Human and Technical Aspects*, PrintPartners Ipskamp, Enschede. Available at: <http://allardstrijker.nl/proefschrift>

⁴ CD-LOR Deliverable 1: Report on Learning Communities and Repositories. Available at: <http://www.academy.gcal.ac.uk/cd-lor/deli.html>

⁵ Currier, S., Barton, J. O'Beirne, R., Ryan, B. (2004) Quality assurance for digital learning object repositories: issues for the metadata creation process. In ALT-J, *Research into Learning Technology*, Vol 12, 1.

⁶ Pockley, S. (2003), "Metadata and the arts – the art of metadata". In Gorman, G.E. ed. (2003) *Metadata applications and management*. Facet Publishing, London, (International Yearbook of Library and Information Management 2003-2004) pp. 66-91

⁷ www.kainao.com

resources. Such a tool could support administrative functions like institutional audits or personal ones such as performance review and could be used to enable sharing. We will use our experience of ePortfolios on the JISC Enhancing Learner Progression project⁸ to explore how such tools might be integrated with repository use.

2.2. Aims and Objectives

The aim of the project is to develop integrated tools to alleviate the additional administration associated with the use of institutional repositories for teaching and research staff, informed by understanding of existing work practices. This will be achieved through the following objectives:

1. Review previous work on integrated tools, in particular drawing together the findings of previous projects (Replika, HLSI, CETL ALPS).
2. Evaluate existing tools for integrating repository functions with existing work practice e.g. e-Cat (REPLIKA's integrated tool) with users from different disciplines and HE and FE sectors.
3. Examine existing work practices surrounding activities (such as developing course materials or research outputs) that might be expected to contribute to or draw on the contents of an institutional repository.
4. Analyse the disciplinary and sector differences in work practice in the use of integrated tools and repositories.
5. Develop domain models and service usage models representing these activities.
6. Explore and evaluate a range of mechanisms for metadata creation, including automatic metadata generation, semantic processing, pattern matching, metadata composition and develop algorithms and processes for their use. Explore the role of professional indexers in metadata creation.
7. Explore a range of search strategies, including keyword and metadata search, browsing, thematic searching, full text indexing, relationship measures (nearness, distance), and recommendation. Evaluate against recognised information retrieval measures.
8. Explore the use of ePortfolios and social networking to facilitate personal management and sharing of repository resources.
9. Iteratively develop and evaluate tools for repository e-administration, integrating with both proprietary and open source software, to reduce personal administrative load.
10. Disseminate findings to evaluate tools more widely.

2.3. Project Plan, Timetable and Work Packages

The project will take an iterative and participatory approach to the development of e-administration tools, working with a number of distinct user groups including teachers and researchers in technology, health, sport and music in HE as well as teachers in FE. We consider it important to recruit user groups from a range of academic and professional disciplines as well as from both HE and FE as it is probable that work practices are very different across these sectors. Leeds Metropolitan University is in the unique position of having existing close working partnerships with 15 FE Colleges through its Regional University Network (RUN). This will form the basis for the recruitment of users in FE. Initial representative users have also already been identified in the Carnegie, Innovation North and Health Faculties at Leeds Metropolitan University and the School of Music at Leeds University has also expressed interest in being a user group for this project.

We will focus our investigation on three core areas of repository function for which integrated tools could be developed:

1. Metadata creation in the packaging of resources.
2. Resource retrieval.
3. Personal management and sharing of resources.

Adopting a service-oriented approach, we will develop domain models for each of these core activities, including use cases and interaction scenarios, based on our work flow analysis. We will use these to develop service usage models and then to prototype and evaluate appropriate tools. Existing KaiNao tools use open standards such as the IMS Content Packaging 1.2 standard and we would continue this commitment. Our design process is in keeping with the Users and Innovation programme development model, following an iterative cycle of user engagement, design and decision making, and technical development and evaluation. The activities of Phase 1 of the Users and Innovation Programme model have already been

⁸ <http://www.brad.ac.uk/acad/tqeg/resources/eportfolios/elp.php>

achieved through previous projects, which have undertaken user needs analysis and initial tool development. We are therefore in a position to bring all these strands together to feed into Phase 2's technical development and implementation.

We will achieve the aims and objectives of the project through the following work packages:

Work Package 1 – Assimilation of Prior Work: This work package aims to synthesise the findings from previous projects, HLSI and REPLIKA which have initiated work on the development of integrated tools. Each of these projects addressed different user groups and evaluated early versions of tools. Work package 1 will compare the findings of these projects to determine common user needs and scenarios which will be a useful starting point for the current project and will assimilate the evaluations of the initial tools, such as e-cat, undertaken in these projects. We will also include the findings of CETL ALPS and the Enhancing Learner Progression Project, as well as other current projects such as CD-LOR. The current project will build on this initial work.

Lead partner: Leeds Met. Months: 1 Deliverable (end of Month 1): Set of common user requirements. List of recommendations for improvement of tools based on previous analysis.

Work Package 2 – Evaluation of Existing Tools: This work package aims to establish how suitable the current version of eCat and the Power Learn Solution suite is for the full range of users and, in particular, test their usability with users from a wider range of disciplines than was possible on the earlier projects. This work package will therefore run a series of usability evaluations of the current tools with representative users from our user groups. The outcome of these evaluations will feed into the future development cycle.

Lead Partner: Leeds Met. Months: 1. Deliverable (end of Month 1): List of recommendations for usability enhancement of existing tools.

Work Package 3 – Analysis of Work Practice: Fundamental to enhancing and developing the tool suite is to understand current work practices in detail. This work package will therefore conduct a detailed work analysis for activities (such as developing course materials or research outputs) that might be expected to contribute to or draw on the contents of an institutional repository. This examination of work practice will take place across the range of disciplines identified and within HE and FE, to explore whether there are any differences in work practice between disciplines and across sectors. It will begin with an assessment with these users of the user requirements gathered in work package 1. The output of this work package will be a domain model and a set of service usage models which will form the basis of the iterative development cycle in work package 7.

Lead partner: Leeds Met. Months: 2-6. Deliverable (end of Month 6): Domain models and Service Usage Models (SUMS) for repository related activities.

Work Package 4 – Metadata creation: The aim of this work package is to support the core tool development cycle by exploring and evaluating a range of mechanisms for metadata creation, including automatic metadata generation, semantic processing, pattern matching, metadata composition and develop algorithms for their use. We also will consider the role of professional cataloguers within the metadata generation process. This will inform the development of the tool suite in work package 7 which will operate in parallel with it.

Lead partner: KaiNao. Months: 1-22. Deliverables (outputs every 10 weeks): Recommendations for processes and tools to support metadata creation.

Work Package 5 – Search tools: The aim of this work package is to support the core tool development cycle by exploring and evaluating a range of search strategies for identifying relevant repository assets and look at ways in which these can be integrated into existing tools. Search candidates will include keyword and metadata search, browsing, thematic searching, full text indexing, relationship measures (nearness, distance), and recommendation. All search algorithms will be tested against recognised information retrieval measures. This package will include investigation of novel and state of the art approaches to searching such as ULM (universal lexical meta-language). A key problem with searching an object repository is that there is little agreement of which terms to use in the metadata descriptions. The ontologies built to aid this process tend to reduce words to point meanings, and the use of the words no longer resembles their normal use. ULM (universal lexical meta-language), recently developed by one of the project team⁹, describes words in terms of their

⁹ Guest, E, and Mairal Usón, Ricardo. Lexical Representation Based on a Universal Metalanguage. In RAEL, Revista Española de Lingüística Aplicada. ISSN 1885-9089, N°. 4, 2005, pags. 125-173
<http://dialnet.unirioja.es/servlet/extrev?codigo=6978>

ranges of meaning, which allows meanings of words to overlap. ULM could be used to compare words for overlapping meaning and improve search accuracy. This work package will inform the development of the tool suite in work package 7 which will operate in parallel with it.

Lead partner: KaiNao. Months: 1-22. Deliverables (outputs every 10 weeks): A set of search algorithms and test data.

Work Package 6 – ePortfolios for personal management: This work package aims to explore the use of ePortfolios and social networking to facilitate personal management and sharing of repository resources. We will explore tools such as Pebblepad as well as open source alternatives and Web 2.0 social network services as mechanisms for providing a personalised and shareable view on repository contents in a form that can be utilised for a range of purposes. We will consider the ePortfolio Reference Model in the context of personal management of repository resources.

Lead partner: Leeds Met. Months: 1-22. Deliverables (output every 10 weeks): Recommendations for personal management tools.

Work Package 7 – Iterative Design and Evaluation: This is the central work package for the project as it supports the iterative and participatory design process through which we will design, develop and evaluate the integrated tool suite to reduce administrative load on staff. We will use the usage scenarios identified in work package 3 to drive and inform participatory lo-fidelity prototyping sessions with potential users. Drawing on these sessions, together with the recommendations from work package 2 these prototype tools will then be implemented and iteratively evaluated and refined until fit for purpose. Work packages 4, 5, and 6 which will be running in parallel looking specifically at each of the three administrative activities, will also inform this process.

Lead partner: KaiNao. Months: 6-22. Deliverables (every 10 weeks): Prototype tools for both proprietary and open source software will be produced and evaluated every 10 weeks.

Work Package 8 – Dissemination and Feedback from the Wider Community: The main dissemination strategy of the project is to make prototype tools widely available throughout the development phase. The community will learn about the project outputs by using them – but will also contribute back to the project through evaluating what they use. Tools will be made available and publicised via a website as they are developed (on a 10 week cycle) and volunteers asked to use and evaluate them. This work package will include the development of a simple instrument to remotely evaluate the tools quickly and easily. In addition, a dissemination meeting will be held half way through work package 7 (Month 14) to allow colleagues to have hands on experience of tools, provide additional opportunities for evaluation and engage in brainstorming discussion on future development. Further consultation with and dissemination to the HE and FE community will be achieved through participation in the Users and Innovation Programme Community of Practice. Further dissemination opportunities at conferences will also be actively pursued and a final workshop held open to the JISC community.

Lead partner: Leeds Met. Months: 1-24. Deliverables: Website (by end Month 2), remote evaluation instrument (by end Month 8), dissemination meeting (month 14).

Work Package 9 – Project Management: Project management will be managed by Leeds Metropolitan and will be achieved through a combination of face to face meetings and electronic support. There will be an initial start up meeting after which work activity will be coordinated through a group blog, which will be used to record progress and share documents. This will replace formal reports (except for the final report) and will be updated at least fortnightly. Face to face meetings will be held every 3 months to share progress and deal with issues that may arise. The JISC Programme manager will be invited to attend these meetings as appropriate. The project coordinator will participate fully in JISC Programme meetings. Coordination with user groups will be achieved through the work packages.

Lead partner: Leeds Met. Months: 1-24. Deliverables: Project blog (from Month 1); final report (end Month 24)

2.4. Risks

Risk	Likelihood	Action
Loss of key staff	Medium	Draw upon other experienced staff from within Leeds Met

Inability to recruit appropriate Research Officer	Medium –short term Low – long term	Short term (up to 6 months): cover the activities using existing researchers. Long term: 1. second member of academic staff; or 2. employ 2 part time researchers to cover different aspects of the project (possible from within our existing PhD and post doctoral researchers).
Unable to work with intended user groups	Low	Draw on other user groups within the university and use connections in wider JISC community
Unable to develop integrated toolset	Low	Build on existing tools and use open standards. Some aspects of search and metadata creation are more speculative but these are enhancements and are not critical to the successful creation of tools.
Failure of partners to work together	Low	Leeds Met and KaiNao have a history of successful collaboration on the REPLIKA project.

2.5. Value to the JISC community

The project has a number of benefits to the JISC community.

1. It will provide a set of open source tools to support e-administration relating to repositories.
2. It will contribute service usage models for repository functions to the e-framework.
3. It will contribute to the further development of relevant standards.
4. It will inform repository developers on work practices associated with repositories.

2.6. Intellectual property rights (IPR) and sustainability statement

All software produced will be open source and produced using open standards to ensure sustainability. We will make all tools available to the community and contribute project outcomes to JISC initiatives (such as the e-Framework) where appropriate.

3. Budget

A summary of the project budget is given in Table 1 which is costed on a Full Economic Cost basis. All Directly Incurred staff costs for Research Officer include payroll costs. Indirect and estate costs for this new staff member are included under Indirect Costs and Estate respectively. Directly Allocated staff costs (all other staff) are based on percentage of time allocated to the project again with associated estate costs shown under Estates and Indirect Costs are recorded under that section.

3.1. Staff

The primary costs of the project are associated with staffing, in order to ensure that the specialists skills and experience are brought together to complete the project tasks. The project will employ a full-time Research Officer for 20 months of the project, specifically to support the User Requirements and Development phases. The intention is to recruit the RO during month 1 of the project to begin in months 2-3 and end at the end of the Development phase (work package 7). The Research Officer will have primary responsibility for work packages 3 and 7, under the guidance of Finlay, Hirst, Taylor and Ryan and will contribute, where needed, to work packages 4, 5 and 6. A Research Officer grade is sought as the work demands both work flow analysis and development/programming skills, a combination which is unlikely to be found in a less experienced researcher.

In addition, the project will make use of existing Research Fellow, Renshaw, and his expertise in conducting professional usability evaluation studies, to undertake the usability evaluation activities, supervised by Finlay. These will take place in work package 2 at the beginning of the project and in work package 7, where the development cycle will include usability testing every 10 weeks. He will also contribute to the development of the remote evaluation instrument as part of work package 8. Renshaw will be utilised for 50% of his time during these periods, which will amount to a total of 4 months. This comprises of 1 month at the beginning of the project to evaluate existing tools, 6 periods of 1.5 weeks to evaluate the

prototypes and 1 month to develop the remote instrument. Allocating 50% of his time for short periods will allow him to undertake visits to user groups in the Regional University Network and other HE institutions in order to conduct detailed evaluation studies.

All other named staff will allocate 10% of their time to the project to undertake the specific duties outlined in the next section (Key Personnel). In summary, Finlay and Hirst will be primarily involved in Work Packages 2, 3 and 7; Ryan in Work Packages 4, 5, 7; Brunt in Work Package 4; Guest in Work Package 5 and Taylor in Work Packages 3 and 6. All will contribute to Work Packages 1, 8 and 9. In addition, another 10% of Finlay's time will be allocated to project management, including leading Work Package 9, attendance at JISC Programme meetings and liaison with the JISC Programme Manager for forward planning and monitoring of the project. Ryan and Finlay will lead the development of the website.

All Directly Allocated academic staff costs (all staff except RO) are calculated based on current salary points with annual single point increments in September 07 and September 08, and take account of planned % increases due to the Framework agreement on pay. The industry partner staff costs include an annual increment of 5%.

3.2. Travel and Expenses

The amount requested for travel and expenses is broken down into the following:

- Attendance at Programme meetings – 1 person x 4 meetings @ £250 a trip £1000
- Quarterly Project Meetings – 8 meetings held in Leeds @ £100 a meeting
(including room booking and catering costs and travel for Ryan) £ 800
- Attendance at conferences – 8 persons, 1 conference each @£1000 a conference
Conferences will be targeted to disseminate the findings of the project and
to network with potential user groups and other researchers and will be both
UK based and international. Target conferences include: JISC, JISC-CETIS, ALT-C,
CSCL, Ed-Media, ICALT £8000
- Travel to RUN User Group sites by RO and RF. This covers seven separate evaluation
activities and six prototyping activities. Each of these will typically involve 5 visits
to different user groups within the RUN averaging £100 a visit (including overnight stay).
13x5x£100 = £6500

TOTAL: £16300

3.3. Equipment

We are requesting an IBM Lenovo ThinkPad X60 1706 Convertible Tablet laptop computer for the new Research Officer. This particular model is needed to allow maximum flexibility in the participatory design stages of the project (Work Package 6) where the RO will be working closely with users. The tablet computer will allow hand sketching and annotation of designs directly onto the computer which will greatly facilitate this phase. The machine needs to be light and portable as the RO will be travelling to User Group sites. In addition, the RO will need a portable inkjet printer (HP Deskjet 460wbt) to enable printing of these sketches on site. We will use open source software for data analysis (Weft QDA).

- IBM Lenovo ThinkPad X60 1706 Convertible Tablet laptop £1600
- HP Deskjet 460wbt £ 250

TOTAL: £1850

3.4. Dissemination activities

As well as attendance at conferences and involvement in the Community of Practice we intend to hold a mid project dissemination and evaluation meeting and an end of project Workshop for the wider community

- Dissemination and evaluation meeting, involving the wider HE/FE community in Month
14. Hosted at Leeds (including room booking, catering and registration for 40) £1000
- Workshop, including presentations of project results in Month 24 (including room booking,
catering and registration for 60) £1300

TOTAL: £2300

3.5. Evaluation

The outputs of the project will be evaluated regularly with user groups. In usability evaluations a standard expenses payment will be made to users for their time in taking part.

- Expenses for users taking part in usability evaluations. Standard rate of £10 per
participant. Each evaluation will involve 50 users. 7x50x£10 = **£3500**

3.6. Other Costs

Consumables covers photocopying for meetings and user activities as well as the printing of a summary report for distribution at the final workshop. Recruitment costs include advertising and administrative support for recruiting the RO.

- Consumables and printing, including a summary report for the final workshop £2500
- Recruitment costs for RO £1000

TOTAL: £3500

3.7. Contribution requested from JISC and partners' contributions

We are requesting all of the Directly Incurred Costs associated with the project, together with the estates and indirect costs associated with the Research Officer and Renshaw. The RO is a new appointment for the project and Renshaw will need to release his time from other activities. In addition we are requesting a contribution towards the costs of Finlay and Ryan, amounting to the staff costs for Ryan and 50% of the staff costs of Finlay. Ryan is employed by a development company and therefore actual costs are needed for his to commit time to the project. Finlay is project manager and the 50% equates to the time spent on this activity.

The Partners will contribute remaining costs, including indirect costs for existing staff, since the project activity is core to their strategic aims. KaiNao Ltd will also contribute existing software to the project for evaluation and further development purposes. This amounts to nearly 40% of the project costs. Leeds Met is committed to developing an institutional repository which will support all the University's core activity. This project will develop ways to integrate such a repository into existing work practices. Leeds Met will therefore benefit from tools which are tailored to their own environment as well as improved buy in from staff, both in Leeds and the RUN, through their involvement in designing these tools. KaiNao Ltd develop repository solutions and work extensively with HE and FE institutions. They have already developed some tools to integrate learning object bundling and metadata creation with Microsoft Office. They wish to expand that tool set. The project offers them the opportunity to do this with direct input from their market in FE and HE.

Directly Incurred Staff	Mar-07	April 07– March 08	April 08– March 09	TOTAL £
Research Officer, Single Pay Spine Point 24, 100% FTE for 22 months	£0	£28,851	£24,043	£52,894
Total Directly Incurred Staff (A)	£0	£28,851	£24,043	£52,894
Non-Staff				
Non-Staff	Mar-07	April 07– March 08	April 08– March 09	TOTAL £
Travel and expenses	£600	£7,900	£7,800	£16,300
Hardware/software	£1,850	£0	£0	£1,850
Dissemination	£0	£0	£2,300	£2,300
Evaluation	£500	£1,500	£1,500	£3,500
Other	£1,080	£1,000	£1,420	£3,500
Total Directly Incurred Non-Staff (B)	£4,030	£10,400	£13,020	£27,450
Directly Incurred Total (A+B=C)				
(C)	£4,030	£39,251	£37,063	£80,344

Directly Allocated	Mar-07	April 07– March 08	April 08– March 09	TOTAL £
Staff	£3,655	£43,847	£40,192	£87,694
Estates	£335	£5,899	£4,588	£10,822
Other	£0	£0	£0	£0
Directly Allocated Total (D)	£3990	£50,427	£45,404	£99,878
Indirect Costs (E)	£4,153	£73,216	£56,947	£134,316
Total Project Cost (C+D+E)	£12,173	£162,213	£138,790	£313,176
Amount Requested from JISC	£7,161	£102,083	£83,669	£192,913
Institutional Contributions	£5,012	£60,130	£55,121	£120,263
Percentage Contributions over the life of the project		JISC 62%	Partners 38%	Total 100%

4. Key Personnel

Professor Janet Finlay, Innovation North, Leeds Metropolitan University is Professor of Interactive Systems in Innovation North at Leeds Metropolitan University. She has 20 years experience in user-centred systems. Her research interests are in human-computer interaction, including participatory design and usability evaluation, and the development of learning technology including learning objects. She has published widely, including an internationally acclaimed book on Human-Computer Interaction, which is entering its 4th edition. She leads research in the newly formed i-Centre in Innovation North, which focuses on innovative interactive learning technology, and is Director of Usability North, a consultancy offering commercial usability testing. She was a partner in the Minerva EU project eDilema (2001-2003) which developed a multi lingual repository for learning objects, and is currently involved in the Leonardo funded REPLIKA project (2003-2006) exploring pan-European sharing of learning objects. She is also co-investigator for the EPSRC network Leonardo considering multidisciplinary interaction design. She will act as project coordinator for this proposal and contribute particularly to the participatory design and usability aspects.

Stuart Hirst, Carnegie Faculty of Sport and Education, Leeds Metropolitan University is Academic Development Manager in the Carnegie Faculty at Leeds Metropolitan University and Teacher Fellow for the CETL Institute for Enterprise). His current academic areas of interest are web site design and teaching and learning using a blend of web supported and face-to-face approaches. He has led the University's contribution to the REPLIKA project and his involvement in this project has provided first hand experience of the need to have tools which support staff and that these should be integrated into day-to-day work habits. As a user of the e-Cat tool, he worked closely with staff from KaiNao Ltd, feeding back on usability issues, and using it to package objects for a digital repository. This early work has provided the basis for his current involvement at the university, in re-evaluating the business processes which would integrate these tools into daily work flows. He will be involved in the work flow analysis and evaluation activities.

Dr Rodney Brunt, Innovation North, Leeds Metropolitan University is a Principal Lecturer at Leeds Metropolitan University. He has a PhD in the field of information retrieval in information and library studies. His specialism is cataloguing and indexing which provide the

fundamental underpinning of metadata systems for both resource discovery and administration; and he has published extensively on methods used in both conventional libraries and special information units. The need to ensure that whatever is lodged in an electronic repository is findable by both creator and potential users is key to the effectiveness and efficiency (both in intellectual and management senses) of the repository and it is in these aspects that he will contribute to the project.

Dr Ben Ryan, KaiNao Ltd, has been involved in software development for the last 18 years. For over ten years now he has applied his expertise to the creation of software systems that enables non expert users to engage with complex technologies such as Formal Software Development Methods, Computer Aided Software Engineering, SGML/XML content creation and publishing and online delivery of educational content. He led the software development team for the HLSI project which was the first implementation of a standards based learning repository in the UK. He has since been involved in developing further repository tools for the EU funded REPLIKA project. Ben has a Degree in Information Technology, a PhD in the field of Computer Aided Software Engineering and Formal Methods and is a member of the British Computer Society. He will be primarily responsible for leading tool development.

Dr Jill Taylor, Faculty of Health is a Principal Lecturer and Director of the Faculty of Health Learning Technology Unit at Leeds Metropolitan University which provides a service for the production of online assessments and learning objects and the training and support for Faculty staff engaged in eLearning. During her career, in both the FE and HE sectors, she has promoted the adoption of student centred styles of learning using technology. She was project manager for "The Virtual Neurology Classroom" which produced learning objects to support online delivery of the Professional Diploma in Dementia Care funded by the NHS North Yorkshire Training Consortium. Further outputs have included the use of streaming technologies to upgrade legacy CAL programs for more flexible web-based delivery and development of blended learning materials to support the development of IT skills which received the Chancellor's Award for Innovation in Assessment. She was a partner in the JISC Enhancing Learner Progression project that investigated the use of e-portfolios to support life long learning and the project team has been awarded further JISC funding to investigate the use of social networking software to support widening participation. She is leading the ALPS CETL Digital Objects and Repository project which is exploring tools for the production and packaging of mobile digital assessment and learning objects for storage in the Endeavor Curator digital repository. This will allow sharing, retrieval and delivery of the objects within the ALPS CETL partnership to support practice placement learning in Health settings.

Dr Elizabeth Guest, Innovation North, Leeds Metropolitan University is Senior Lecturer in Innovation North at Leeds Metropolitan University. She has a PhD in artificial intelligence from Edinburgh University which involved developing a method to produce a smooth reconstruction from images of serial sections. After spending some time in the Sudan with the Summer Institute of Linguistics, she held a postdoctoral position at Leeds University, developing a novel method for robust matching that has been proven to work with 2D images and 3D surfaces. Her current research spans image processing (segmentation of bio-medical images and identifying weapons in x-ray images of baggage) and natural language processing. She has developed a novel parsing algorithm that will handle varying degrees of word order flexibility. She was awarded a Promising Researcher Fellowship in 2005 to work with linguist Ricard Mairal Uson at UNED in Madrid, which resulted in a new linguistic framework ULM. Her role will be to develop the application of this technique, and others, to provide more robust search mechanisms for repository use.

Dr Tony Renshaw, Usability North, Leeds Metropolitan University has a PhD in Computing and is a specialist in usability evaluation, being a Research Fellow within Usability North, a commercial consultancy activity based at Leeds Met, and offering usability evaluation services. Tony's work includes the use of state of the art eye tracking technology to understand user strategies, as well as survey and observational usability assessments. Tony is skilled in analysis of evaluation data. He will be conducting the main usability studies. His involvement will amount to four months over the lifetime of the project to conduct evaluations.

Research Officer, Innovation North, Leeds Metropolitan University. This post will be recruited specifically for the project. Recruitment will begin immediately with a view to appointing in month 2-3. However the initial 6 months could be covered by the rest of the project team with temporary support from existing research staff if this was not achieved.